HOMEOBOX GENES EXPRESSED IN THE ADULT AND REAGGREGATING SPONGE. *Memoirs of the Queensland Museum 44: 306. 1999*:- Homeobox genes encode a large family of conserved transcription factors that control a range of important developmental decisions, and can be interspersed or organised in clusters (e.g. HOX genes) within metazoan genomes. A striking feature of many homeobox orthologues is how they are expressed in a similar fashion during the development of phylogenetically-disparate animals. In recent years, interest has developed in homeobox genes in the lower metazoans, such as platyhelminths, cnidarians, and sponges. Instead of studying embryological development, focus has often been on the role of homeobox genes during regeneration. Interestingly, these genes exhibit comparable expression patterns during the regeneration of lower metazoans as they do during normal embryological development of higher metazoans. In this study, homeobox genes expressed in the adult sponge (newly dissociated cells) *Iotrochota baculifera* (Demospongiae: Poecilosclerida: Myxillidae) and during reaggregation were identified by RT-PCR with degenerate primers and sequencing. As with regeneration in other taxa, investigating the molecular genetics of reaggregation in the sponge, apart from providing many practical advantages, gives us insight into the level of conservation between embryological and other developmental processes. To confirm the poriferan origin of the homeobox genes isolated, the identical procedure was applied to another sponge and some homologous genes were obtained. As sponges appear to be monophyletic with the rest of the Metazoa and the first lineage to diverge during metazoan evolution, the study of their homeobox genes provides insight into the initial role of metazoan-specific homeobox genes in governing the multicellular state and cellular differentiation. ❐ *Porifera, reaggregation, development, homeobox genes, regeneration.*

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ANTIMICROBIAL ACTIVITY OF SPONGES FROM SOUTHERN BRAZIL, ATLANTIC COAST. *Memoirs of the Queensland Museum 44: 306. 1999*:- Within the research program of biologically active natural products, we have investigated different species of marine sponges collected by scuba diving in the South-western Atlantic region, near the coast of South-Brazil, aiming at the evaluation of their potential as a source for new drugs. In order to achieve this goal, the antimicrobial activity of five species, *Tedania ignis* Duchassaing & Michelotti, *Pseudaxinella reticulata* (Ridley & Dendy), *Polymastia janeirensis* (Boury-Esnault, 1973), *Batzella* sp. and *Petromica* sp. were analysed. The sponge species found in this particular region constitute a group of shallow-water Demospongiae in which a pharmacological usage has not previously been evaluated. Aqueous extracts obtained by grinding and maceration for 30mins following freeze-drying, as well as organic solvent extracts (toluene: methanol 3:1 v/v) were prepared from organisms frozen since the harvesting. Antimicrobial activity was evaluated by the agar diffusion method on paper disks (6mm diameter). Each sponge extract was tested for growth inhibition of five bacteria species: *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC 6538P), *Staphylococcus epidermidis* (ATCC 12228), *Bacillus subtilis* (ATCC 6633), *Micrococcus luteus* (ATCC 9341) and two yeast species: *Candida albicans* (ATCC 110231) and *Saccharomyces cerevisiae* (ATCC 1600). None of the tested extracts analysed by this method could inhibit the growth of these microorganisms, an exception was the *Petromica* sp organic extract which showed an inhibitory activity for *Bacillus subtilis*. The same extracts were analysed for antitumour activity by *in vitro* inhibition of proliferation of different tumour cell lines. Some of the extracts showed promising results. The preliminary antimicrobial assay can be useful for pointing out sponge species to be further analysed. ❐ *Porifera, antimicrobial, Atlantic coast, southern Brazil, biologically active natural products, antitumor.*

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